

THE B&O MODELER

Volume 4, Number 3

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**MODELING B&O'S SCALE HOUSES, SCALE TEST CARS, & TOOL CARS
LATE 19TH CENTURY M-2, M-3, AND M-5 BOXCARS IN HO**

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Cover Photos – Top, Checking the Scales – Edwin Kirstatter photo. Middle, Early M Class Boxcars – Michael Hohn photo. Bottom, Bachmann HO Baldwin RF-16 – Eric Hansmann photo.

AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost. Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of [annual memberships](#) are available, Regular memberships are only \$35.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

**B&ORRHS
ATTN: Membership
P.O. Box 24068
Baltimore, MD 21227-0568**

FROM THE EDITOR

Modeling the B&O

What's the goal? That is one of the beauties of making models, one gets to set one's own goals for what the end product should be. As editor of this publication I have always tried to embrace the various interests of the Society's members and those who model the B&O because it was part of the larger national rail system. In terms used in corporate

America today, *The B&O Modeler* has tried to "embrace and celebrate diversity." I encourage all of our readers to pursue a similar course. Not only does it strengthen our community, but it might open new doors. Michael Hohn models the Lehigh Valley in the late 1800's and after seeing his models I really want to build one of the BTS models. Thanks Michael.

And for that matter, thanks to all of our authors, all of whom have helped me by sharing their talents.

Greg LaRocca, one of our Associate Editors, models the B&O in the same era that I do and yet he takes a very different approach. He focuses on portraying the B&O as an operating layout and does not care as much about making sure each freight car has the correct brake rigging. Sometimes I research and try to portray these details to exhausting ends. We each take a different approach and yet we respect each other. Believe it or not we have worked together on this magazine for three years and have only spoken once for about two minutes. We both attended the Ohio Mini-Con this year, but only found each other

at the end of the day and we both had other commitments for the rest of the day. While we share a common interest, modeling the B&O, we go about it in different ways, yet still respect each other much. Can you imagine working with someone for three years and never speaking? Turns out it is not too hard as long as you respect each other and offer tolerance for differing opinions. Thanks Greg. And again, thanks to all the editors and reviewers who contribute to every issue. What's the point? Let's keep working together, and if you have built some fences with others interested in the B&O, knock them down and return to a focus on your common interest, the B&O Railroad.



The *Cincinnatian* drifts through a sea of coal at Keyser on David Parks' layout. Mike Kotowski's backdrops frame the scene. Sam Romerstein. Photograph

MODEL PRODUCT NEWS

EDITED BY ERIC HANSMANN

HO Scale

RF-16 Sharknose Diesels

Between 1950 and 1953 the B&O purchased Baldwin RF-16 diesel locomotives. Originally, the A units numbers were 851, 851A to 865, 865A odd only, and 867 to 871 odd only. B unit original numbers were 851X to 865X odd only, 867, 867AX to 871, 871AX odd only. They were renumbered during the 1957 general renumbering to 4202-4220 (A units) and 5202-5214 (B units). These locos ended up being used in coal drag service on lines from Grafton to Buffalo and lasted in B&O service until the early 1960s.



Bachmann Industries has recently produced a new HO scale version of this classic locomotive and offered it painted and lettered in the original B&O style. An A and B unit was purchased and tested on the layout of the Mon Valley Railroad Club of West Virginia. Both A and B units are powered and have a DCC decoder already installed. After a quick break in on the layout with no load, these models were put to work to test their capabilities. The layout features a 100 foot section of mainline with a near-constant two percent gradient. Most curves were 30-inch radius or greater with the exception of one large turnback curve of 27.5-inch radius near the top of the grade.



The loco pair was coupled to a 32 car train of 50 and 55 ton hoppers that each weighed between 2.5 and 3.5 ounces. A caboose was added to the end of the train with a similar weight. No modifications to the DCC decoder parameters were made. These locos

were just out of the box and were hardly run fifty feet before the test began. The models started this train with ease and maneuvered well through the yard throat and interlocking. Once the entire train was on the grade, the locomotives slipped and were unable to

pull the train further. After backing down grade, one car was removed and the grade was again attempted. Again the locos stalled when the entire train was on the grade, and another car was removed. In total, four cars were removed from the train to achieve a balance for the locomotives to pull it up the hill. These Sharks handled the 28 cars and caboose up the long twisting grade with no adjustment to the speed control. There was some slight wheel slip on the sharper 27.5-inch radius curve, but everything kept moving. The wheel slip ended once most of the train was around the curve. No other difficulty was noted to the top of the grade.



Returning down the grade with the same train, some surging was noted at lower speeds. This was not as noticeable as the surging noted on some other quality diesel locomotive models. Possibly some thrust washers installed on the worm shaft will alleviate the surging. From an operations standpoint, the models performed well right from the box. With more operating time and some additional weight, these should perform even better.

In the opinion of this reviewer, these are sharp looking models. I am not a rabid B&O fan, so slight nuances in proper paint color may not be realized. No blemishes were noted on the paint and finish. These locomotives are lettered for the Baltimore & Ohio but they are not numbered. There were no number decals supplied with these models. The models reflect the as-built condition of these locomotives when they entered service. Later sandbox and other modifications are not part of this model. Additionally, no scale drawings were available to compare general dimensions.



The coupling distance between units is much greater than on the prototype. A drawbar connection between A and B units would offer a much better coupling distance. These two units ran very well together, so only one DCC locomotive address is used. Semi-scale couplers will replace the provided knuckle couplers. The locos have a level of finer details with separate grab irons, fine screen representation and window gasket picked out in black. Cab window wipers are molded into the window glazing and highlighted with black paint.

Two aspects seemed a bit off when the models were compared with period images of B&O locos. The pilot cowling on the A unit seems too flat, especially below the coupler. Additionally, the truck side frames seem to have smaller brake cylinders than the prototype. This may be an optical illusion as the prototype was highlighted with road dust that makes

some detail on the trucks easier to see than on the model.



As an aside, since acquiring and testing these locomotives, they have seen regular service on this club layout and have performed well during several operating sessions. A couple of other club members have purchased this locomotive based upon their experiences. I can think of no higher compliment.



Builder's Photograph

O Scale

SMR Trains, PO Box 753, Mount Laurel, NJ 08054 www.smrtrains.com. Preorder pricing is \$1299.95 for 2-rail and \$1349.95 for 3-rail.



This SMR (Schneider Model Railroading, Inc.) release is the famous early freight engine, the 0-8-0 Winans Camel. This engine was one of the most successful heavy haulers during the early days of railroading. They were produced in considerable numbers and sold to many eastern coal-hauling railroads.

The Baltimore and Ohio had a long history of working with and purchasing products designed and manufactured by Ross Winans. The first Camel engine was built in 1848 and purchased by the B&O. It was named the "CAMEL" and gave its name to the class. A total of about 300 were built with about 2/3 going to the B&O.

The Camel was designed to haul as much freight as possible over the tight curves and steep grades of the railroad. It was also designed to burn anthracite coal. To achieve these goals, Winans designed a revolutionary locomotive. He first

placed all the engines weight on the eight small, 43" drivers, very closely spaced. This maximized traction. Then to handle tight curves, the center drivers were "blind" (without flanges). Finally, to burn hard coal, an oversized firebox was needed. Conventional placement would not provide enough grate area so he designed one which hung on the end of the boiler like a strange addition. The many unique and unusual features of the Camel are well documented in John White's *A history of the American Locomotive, Its Development: 1830-1880*.

SMR's model is as true to prototype as can be done when modeling a locomotive from an era where blueprints have not yet been invented. Descriptions of decoration are skimpy as well in this age of faded black and white photos. What is known, for example of Winans's original paint style is that the engines were painted a "sickly green" and that the rods were not polished but painted. Winans apparently was unconcerned with producing locomotives sporting the lavish striping, polished brass and gleaming metal of the times.

The Camels had a long service life with the B&O, the last ones retired in the 1890s. During this 40-50 year period, they were rebuilt several times. SMR's B&O models show the engine "as delivered" in the 1850s and in the most common configuration of their later service, which dates from a rebuild during the 1870s.



DOTS AND DASHES, ONES AND ZEROES: DIGITAL RESOURCES FOR THE RAILROAD RESEARCHER AND MODELER

BY: NICK FRY

Introduction to the Series

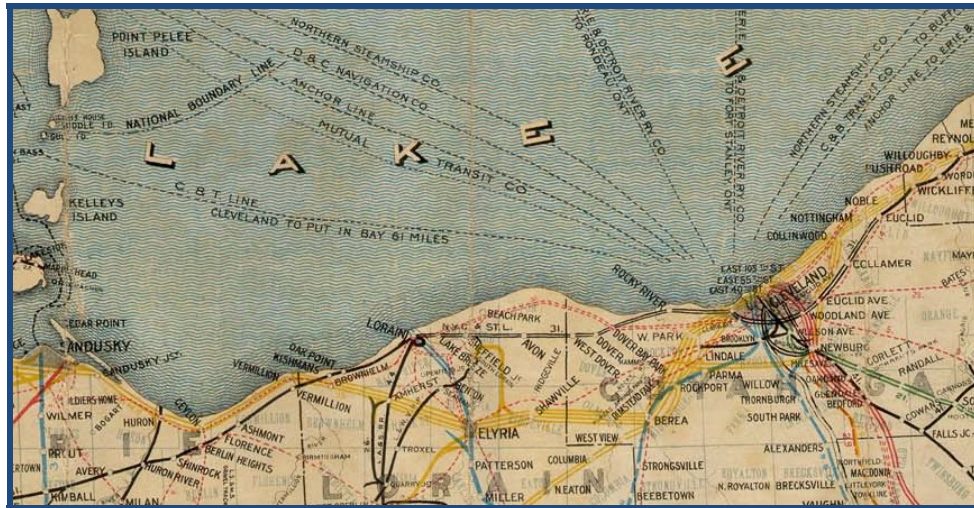
The internet has become one of the greatest resources for research today. At a moment's notice anyone can search on nearly any topic and find information. However the accuracy of the source of the information should be questioned. While the internet can be a great way to learn factual information, it is also just as easily a means to disseminate legends and folklore to the masses.

This series is designed to help modelers and researchers locate resources to find accurate information and imagery on the internet and other digital media (such as CD-ROMs.) Much of this information will consist of digital images and maps,

but at times there will be a significant amount of textual information available on-line for certain topics.

As always the internet is always evolving and new resources are available every day, if you have found resources that are not mentioned in articles, please contact me at: archivist@borhs.org. I will publish additions and updates to articles as new information is acquired at the end of the regular feature. Our very first feature, which begins below, will look at the documents available to help research and model the Lake Erie Ports.

The Lake Erie Ports



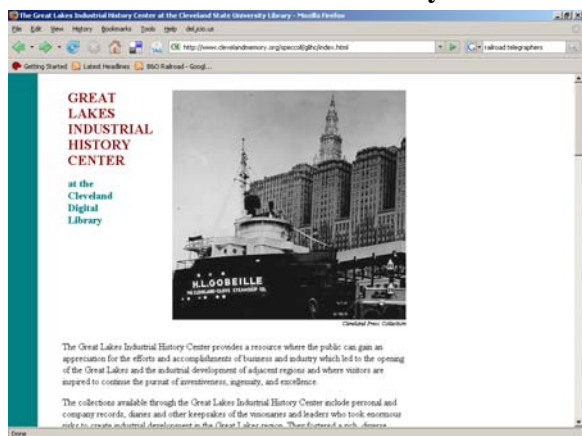
1914 Railroad Map of Ohio from: <http://www.railsandtrails.com/Maps/>

The ports of Lake Erie; Cleveland, Toledo, Lorain, Fairport and others, were significant sources of revenue for the major east coast trunk lines. These ports received iron ore from the mines of Minnesota for shipment by rail to the steel mills of Pittsburgh, Wheeling and eastern Ohio.

With the decline of the American Steel industry in the 1960s through 1980s, many of these ports have become shadows of their former selves and their facilities have been left to rust or scrapped. This has left modelers and researchers who are attempting to describe the operations of these ports and their rail-

marine transfer operations in something of a quandary as they can no longer visit the actual facilities and examine the grounds themselves. Fortunately there are several resources available today that can help researchers and modelers learn about the ports, their facilities and their operations. Many of them are on the internet for free, supported by public institutions that are funded by your tax dollars or donations. Others are digital publications available from historical societies and libraries. In any event, we hope that you will find the sources presented below to be useful.

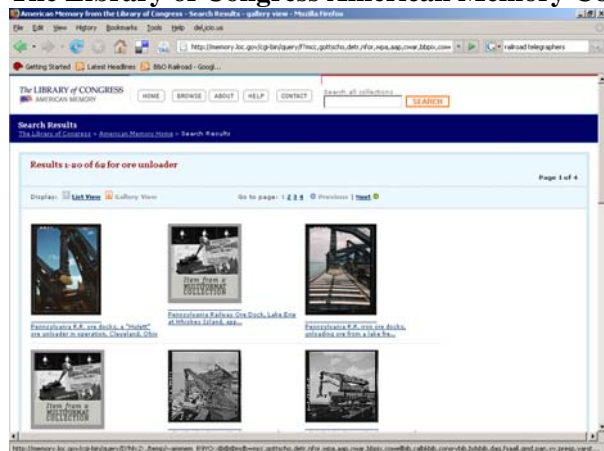
The Great Lakes Industrial History Center at the Cleveland Digital Library



<http://www.clevelandmemory.org/speccoll/glihc/index.html>

If one had to recommend a single website to help someone research the Lake Erie ports, this would be it. The Cleveland Digital Library has created a special industrial history center to preserve and present images, documentation, maps and other materials relating to the once thriving industries that lined the north shore of Ohio. Of particular note is the section on Hulett automatic ore unloaders, a machine that was unique to ore piers.

The Library of Congress American Memory Collection: Multiple pages



PRR Ore Dock: <http://hdl.loc.gov/loc.pnp/hhh.oh0121>

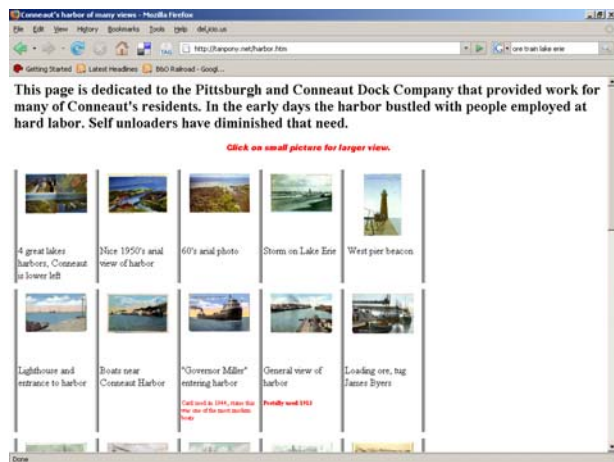
FSA/OWI Images: keyword search on “ore industry” at American Memory home page:

<http://memory.loc.gov/ammem/index.html>

The Library of Congress has two excellent collections that are useful to research and model the ore facilities on the Great Lakes, the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) and the FSA/OWI Collection. Both can be accessed from the

American Memory website and users can begin searching the entire collection. Of particular interest to modelers would be the isometric drawings of the PRR Ore Dock unloaders.

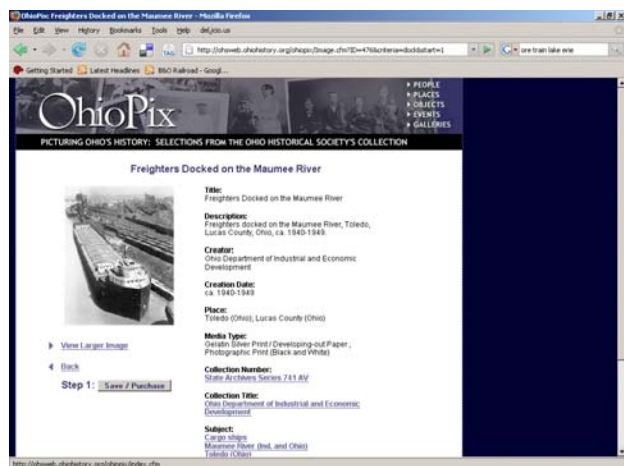
Conneaut's Harbor of Many Views



<http://tanpony.net/harbor.htm>

A personal website that displays just images of the Conneaut docks of the PRR. Granted it's not B&O, but it does help with imagery.

Ohio Pix: A Resource of the Ohio Historical Society



<http://ohsweb.ohiohistory.org/ohiopix/index.cfm>

This site is the search engine for images from the collection of the Ohio Historical Society. Users will have to enter in very general terms such as "ore" or "steel" to get images that will assist them in their research. It's not a very large collection, but still has some nice shots.

Black River Historical Society

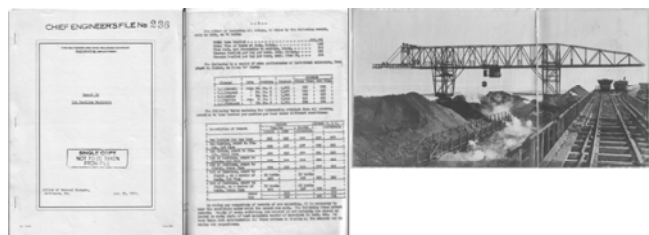


<http://www.loraincityhistory.org/archive/search.asp>

The local historical society for the city of Lorain, OH has a search engine for images in their collection on-line. A search of "railroad" will generate eight pages worth of hits. This is a very nice collection for research.

Resources on CD-ROM

The B&O Railroad Historical Society currently offers three resources on CD-ROM that may be of use to modelers of ore facilities on the shore of Lake Erie. These are reports from the Office of the Chief Engineer and are as follows:



40401 Report 236: **Report on Ore Handling Machinery.**

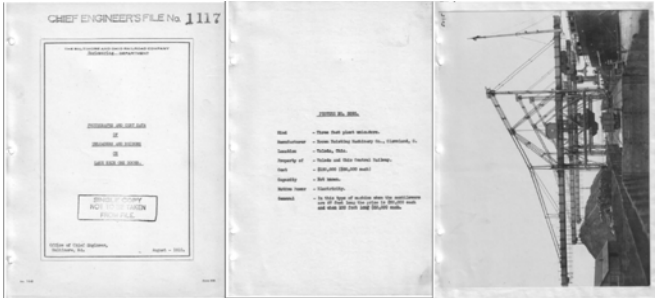
14 pages. A report on Hulett Ten-Ton Unloaders, Brown Five-Ton Unloaders and Hoover and Mason Six-Ton Unloaders. This document is a supplement to another report on the ore docks in Erie and Cleveland and deals only with these types of unloaders and the evaluation of these machines for use by the B&O. There is one photo in

the back of the report. This is a CD containing a PDF file. It must be viewed on a computer and not played on a television video player. This document is also available on-line for free at:

<http://www.borhs.org/archives/archives.htm> Click on the link titled: **Report on Ore Handling Machinery**



[40403](#) Report 330: Toledo, Ohio **Report on Freight Terminals.** 185 pages. This 1913 report provides a survey of all freight facilities and lines into and around Toledo, OH. The report is copiously illustrated with photos and maps of the area. Passenger operations are also briefly discussed as are the business and industries in Toledo. This is a CD containing a PDF file. It must be viewed on a computer and not played on a television video player.



[40406](#) Report 1117: **Photographs and Cost Data of Unloaders and Bridges on Lake Erie Ore Docks.** 52 pages. A 1910 Report with cost and tonnage figures for various types of unloaders and bridges on the docks of Lake Erie, it is copiously illustrated with photographs. This is a CD containing a PDF file. It must be viewed on a computer and not played on a television video player.

All of these documents can be ordered directly from the B&O Railroad Historical Society Company Store at: www.borhs.org Click on “**Company Store**” and then click on the “**Videos**” category on the left hand side of the page.

UPDATES AND ERRATA

2008 B&O Railroad Historical Society Eastern Mini-Convention

August 9, 2008, Camp Hill-Wesley United Methodist Church, 645 Washington Street, Harpers Ferry, West Virginia. Bring your models; there will be a display table and time to talk about them.

<http://www.borhs.org/events/events.htm>. RSVP \$15.00 in advance, \$20.00 (includes breakfast and lunch) at the door. Registration limited to 75 people. Email: archivist@borhs.org

2008 B&O Railroad Historical Society Annual Convention

The Society's 2008 convention is planned for Butler, Pennsylvania, during October, 2008 (usually the first or second weekend). A convention flyer will be sent to members in late August/early September announcing the convention and providing information on convention events. The flyer will also be posted at

<http://www.borhs.org/events/events.htm>.

2008 St. Louis Railroad Prototype Modeler's Meet

The Fourth Annual St. Louis RPM Meet will be held on Friday, Aug 15th and Saturday, August 16th at the Gateway Convention Center, One Gateway Drive, Collinsville, IL 62234. Collinsville is 12 miles east of metro St. Louis on I-55/70. Meet Hours: 9 AM to 10PM both days. Admission: \$20.00 Friday & Saturday, \$15.00 Saturday only. Kids under 14 free with paid adult admission. Vendor set-up at 7:15 AM Fri. Sales end at 6:00 P.M. Saturday. Contact John Golden at Golden1014@yahoo.com or (812) 929-7181 or Dan Kohlberg at paducah@mindspring.com for more information. The Gateway Center Website is <http://www.gatewaycenter.com/>. Lodging info can be found at http://travel.yahoo.com/p-map-475520-map_of_collinsville_il-i.

Clinics

Presentations will run from 9:30 AM to 8:30 PM both days. This year's line-up includes:

Ed Hawkins - Missouri Pacific AC&F-Built Express

Baggage Cars

Pete Smith - Scratchbuilding in Styrene

Mike Moore & Clark Propst - A Tribute to Soph

Marty

Tony Sissons - Scratch Building Prototype Turnouts

John & Dan Kohlberg - The Illinois Central Gulf Sparta District, 1972-1986

Mont Switzer - Tools, Tips and Techniques

Stan Rydarowicz - Modeling Transition-era SFRD

Refrigerator Cars in HO

Chad Hewitt - Intermodal Topic

Dave Roeder - Scratchbuilding Structures

Brian McQuitty - Researching Abandoned Lines

Vendors

60 tables of elite vendors, including Tangent Scale Models, AMB, WrightTrak, Bob's Photos, Moloco, Rail Yard Models, Funaro & Camerlengo, Proto:87 Stores, ICG Custom Decals, Badger, Big Four Graphics, SC Model Works, Mountaineer Precision Products, Stan Rydarowicz, Red Board Hobbies, Mike Gruber Photos, and more!

MODELING B&O'S SCALE HOUSES, SCALE TEST CARS, & TOOL CARS

By EDWIN C. KIRSTATTER, with comments by SCOTT TROSTEL

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.

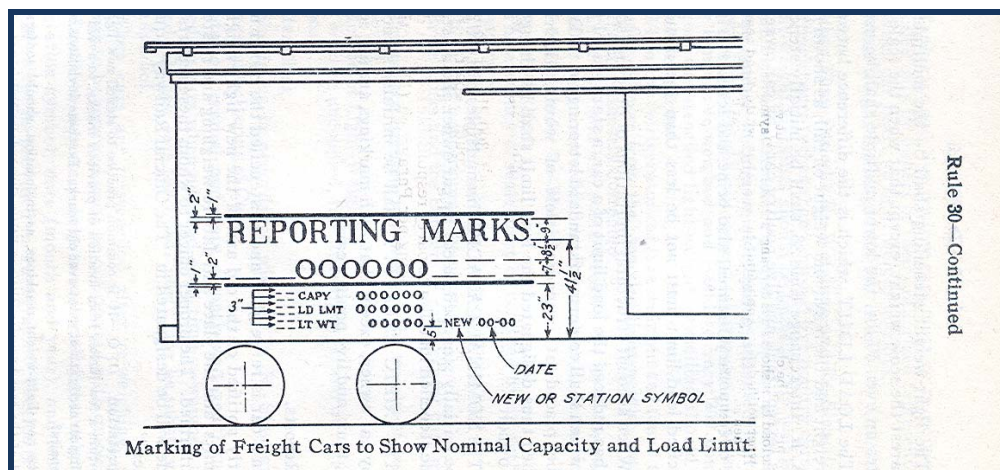


Introduction

You seldom see a scale house on a model railroad layout. This is a very essential part of a real railroad's operation, therefore modelers should have at least one on their pike. They don't take up much room.

Real railroads have track scales so that they can bill the customer accurately for the commodity hauled. And railroads must reweigh all cars in interchange service except tank cars and live poultry cars at regular intervals so that they can stencil correct light-weights on cars. You subtract the light-weight from the total scale weight of the car to get weight of the customer's load to be put on the waybill for billing purposes.

In the 1955 the frequency of reweighing and re-stenciling was governed by AAR rules 3, 30 and 36. When a car was first built it would be weighed on a certified scale and light-weight stenciled on car along with its new date. As an example, all-steel house cars must first be reweighed before 30 months and subsequently re-weighed before 48 months thereafter. When re-stenciling, the station completing the work would use its symbol replacing the word NEW or the last reweigh location. Other things that required re-weighing and re-stenciling of lightweight were repairs to cars. Thus, the date built new, month and year, per Rule 3(s)(4) stenciling required on all cars. (AAR, 1955)



American Association of Railroads, Code of Rules for the Interchange of Traffic, dated January 1, 1955.

An example of this would be a B&O M-55c class #466096 which was built new 5-45. It would have to be re-weighed by 11-47 and again 11-49 and every 48 months thereafter unless shopped for repairs.

All old stenciling must be obliterated with quick-drying paint prior to being re-stenciled. There were a limited number of colors of this paint not necessarily

matching the B&O Freight Car Brown, such that reweigh paint patches usually appeared as a different color from the rest of the car. The light-weight stenciling would be a multiple of 100 lbs. nearest to the scale weight, except when the scale weight indicated an even 50 lbs – then the lower multiple would be used.



X4905 a 40,000 lb. Scale Test Weight Car fabricated from steel plates in 1919 and X4477, an old wooden open platform trussed coach used as a Scale Tool Car at unknown location and time. X4477 was possibly an 1890 vintage Lackawanna truss rod commuter coach acquired from a dealer by CI&W upon startup in 1916 as a coach. The B&O converted it to a scale tool car in 1928. This is a sister car to the Royal Blue Line replica coach 445 at the B&O Museum. Edwin C. Kirstatter Collection.

The B&O had 124 track scales solely owned and three jointly owned that were located all over its system as late as 1960 (there were many other privately owned scales used for billing purposes). Their lengths varied from 42' to 72', with the average being 50' long, and weight capacity from 120,000 lbs. up to 400,000 lbs. Not all track scales had scale houses. I found an old postal card of Washington, Pa. that showed a track scale across the tracks from the station and it did not have a house, just a case enclosing the recording beam adjacent to the track. In 1965, I passed through there and took two pictures of this station. One view shows the scale case but it had moved to the other side of the track. I guess you can't trust those old postal cards to be accurate, or had that scale been rebuilt?

Track scales need to be checked for accuracy and re-

adjusted on a regular basis. But I will let Scott Trostel tell you of his teen-age experiences at Piqua, Ohio on this subject.

I had spent many a happy hours there at Piqua (Ohio) scale house at Statler Road weighing cars, being a general pest and riding the yard job in and out of the quarry of the Armco Steel Company. There was another scale on the P&T branch (Piqua & Troy) at south end of town. Most of my hanging around was between the ages of eleven and sixteen. I lived two blocks from the scale on the P&T and about a mile from the one on the main line. (This had been the former CH&D line). This was in 1963. The scale inspector came every 90 days with his two scale test cars and the tool car. One car was 40,000 lbs., the other was 80,000 lbs.



XM3037 a Scale Tool Car converted from #83659, a Class M-15j boxcar. Laid up over the weekend at Akron, Ohio in January of 1958.
Edwin C. Kirstatter Photograph

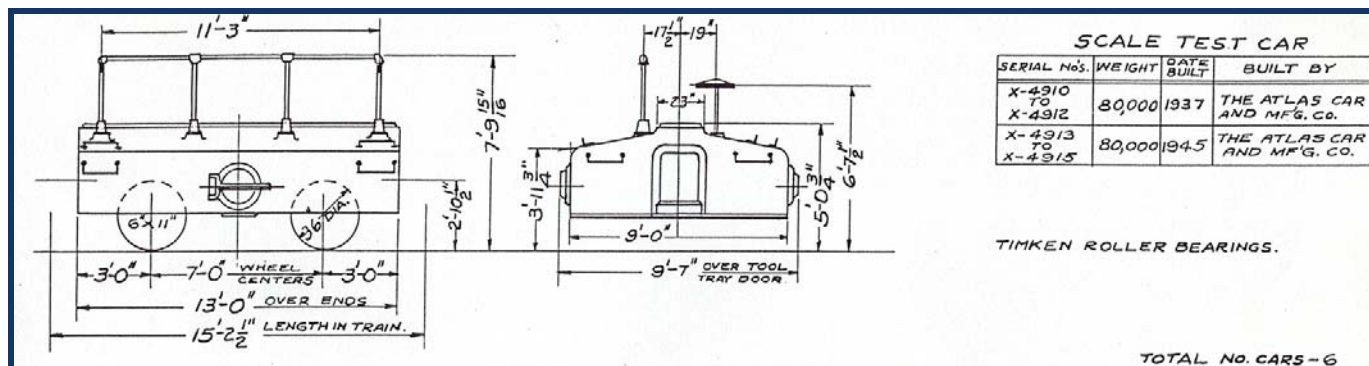
I found a place on my layout where I could put a scale track and a scale house on a through track, alongside one yard next to the caboose track. I could have modeled it after the one in Akron but I thought the one in the Standard Plans book of 1907 had more character. It is 6'-0"x16'-6" in size and it fit better in the space that I had available. I built mine in HO using Northeastern wood and a Grandt Line door and windows. I painted it Depot Buff with Black trim to fit my B&O era of 1956. Mine does not exactly follow the plan, it had to be made to fit my space just as did about every one that I have seen on the B&O. It has some interior details like a scale beam, potbelly stove, coal bucket, desk and chair. I also scribed the floor where I thought the access door would be to the pit.



My track at this location is laid on old Tru-Scale wood self-gauging roadbed. It was easy to install the by-pass rails, switch points, and a plank over the platform. I chose to make mine 50' long so I notched the rails for this length. It does not really work but it makes nice scenery and gives switching crews something extra to do.

According to Scott,

The scale inspector said he did all of the scales in Ohio and Indiana and maybe he said Illinois too. He was out of Cincinnati but I don't think that was his residence. Never saw any Blue flags. Instead he locked the turnouts away from the scale track with his own locks and they were not compatible with a standard switch lock key. This is an acceptable practice in lieu of the blue flags. When he needed a helper, the B&B gang came. They did new decks at Piqua and he was there for most of the time, but the B&B gang did the actual labor. They had a beam bend in the deck and he was there for the whole change-out and brought the scale test cars to reset the scales after the new beam was in place.



Copy of B&O RR Diagram T-64744 Revision B 10-30-1947. Scale Test Weight cars X4910 to X4915

Even if you do not have a scale track on your layout you could have two Scale Test Weight cars and a tool car to go along with them. It is something to run on your local trains at the rear in front of the caboose. These cars had a speed restriction of 25 to 30 miles per hour. Scale test cars came in many varieties. The old ones were fabricated from steel plates and standard shapes. Later cars were cast from steel in one piece or in halves bolted together at center. In 1960 the B&O had 18 scale test cars listed as “Work

Equipment, Service”. The numbers were X-4900 to X-4919, but not consecutive. Two cars weighed 30,000 lbs., six 40,000, one 50,000 and eight 80,000.

These cars were calibrated at the Martinsburg, W.Va. shops on a standard scale that was in turn calibrated by the United States Bureau of Standards, located in Chicago, Ill. at the Clearing Yard of the Belt Railway of Chicago. They sent out standard weight cars once a year.



X4910 & X4919 together at Dover, Ohio in August of 1965, Caboose appears to being used as a Tool Car at this date. Note the couplers are painted red and all safety appliances painted Refrigerator yellow. Edwin C. Kirstatter Photograph.

Many model scale test weight cars have been available over the years in HO. One of the first was a kit by George Stock of Philadelphia, PA way back in the 1950's. It was a cast lead body with wheels, wire for handrails and a stamped brass brake wheel. Other kits to follow were produced by Stewart Products and DJH Inc. Brass imports have come from Hallmark Models Inc. and Overland Models. The last one offered was from Walthers, a plastic kit. In S scale SouthWind Models imported a cast brass model. O scale saw its first model way back in the forties or

fifties. Made by an unknown manufacturer, this was followed by a brass model imported by Overland Models. The most recent one was by MTH 3-Rail done in a Zamac molding. Now Micro-Train Line has one for N scale.

My HO model Scale Test Weight cars include a Stewart Products kit for an 80,000 lb. car and a greatly modified one of George Stock's kit to look like B&O X-4904, a 30,000 lb. car that had journal boxes mounted in pedestals. I am working on another

George Stock kit that will resemble B&O X-4900 with a square side access door when I get it done. In addition, I have just finished working on the Hallmark brass model to which I added and changed many small details, such as placard board, tack boards, and cut levers. This will be one of the B&O's

80,000 lb. cars. Couplers are one of the hardest things to put on most of these kits. I paint these models with a glossy black paint, refrigerator yellow railings, sill steps, and grabirons. The couplers on these were painted with Devils Red paint like cabooses. The decals are white lettering.



XM3037 Scale Tool Car with X-4913, an 80,000 lb. Test Weight Car along with X-4918 a 40,000 lb. car at Akron, Ohio on a cold January day in 1958. They are sitting on the Pump House track. Edwin C. Kirstatter Photograph.

The prototype cars were built by: Atlas Car & Mfg. Co. of Cleveland, OH, Baldwin – Southwark (BLW), Philadelphia, PA; Lima – Hamilton Corp. of Lima, Ohio; and American Car and Foundry Co. Most of these cars had roller bearings and some had solid journal bearings that were replaced with roller or ball bearings to reduce weight loss due to wear and to make it easier for scale inspectors to move cars

across the scale. None of the B&O cars had automatic air brakes as this would change the weight of these cars due to wear of brake shoes. The hand brake was used only to anchor a car due to its free rolling bearings. Scale cars were verified on master scale at least every three months, or after each general test trip.



Scott Trostel also related that:

Of the two scale cars, the 80,000 lb. car was used to do the first check of the scale and if things weren't out of adjustment too much, it made a couple passes over the scale deck and that was it. The weights were transferred down the scale deck via a series of rods and links and when more than one rod (as I recall) would be off by over 50 pounds the inspector would open the pit access door and climb down into it to make proper adjustments. If the scale dropped back to into acceptable weights, he called it a good adjustment. When it was a bad day in the pits, he ran the 80,000 lb. car first then ran the 40,000 lb. car to validate the accuracy across a range of two separate weights. I never saw two cars on the scale deck at the same time. He would stage the cars, one on either end of approach track at edge of deck, but not on the deck that I remember.

A Scale Tool Car was accompanied by a pair of Scale Test Cars. The Scale Tool Car served as the scale inspectors' office, tool house, repair parts transport, as well as his home away from home. In the 1950's these cars were usually old boxcars converted to this service. An older picture of a tool car show it was a converted wood open platform coach. In later years, the B&O scrapped the wood cars and replaced them with RPO's, C-15 Express Cars, and M-26 Boxcars. After 1960 they were painted aluminum with black lettering.

I have built one tool car so far, using an A-C Models Engineer's Car wood kit that I converted to look like the XM3037 that I photographed in Akron in 1958. This car had been converted from a B&O Class M-15J #83659, outshopped on 7/24/1956, by removing the side door and boarding it over, adding four windows per side, and adding vestibules at both ends

with doors and windows. I did the same thing with my model by placing the two pre-punched sidepieces together at center without the door pieces. These parts were reused at each end of the car with doors. The outer ends were scratch built from Northeastern scribed wood with a centered window from a Silver-Streak caboose.



Steps at all four corners had to be built from brass with wood treads. My picture shows only one stove chimney so that is all I put on my model at one end and awnings to go over all side windows. I applied handrails and grabirons at all of the locations found in my photographs. This model also got complete brake rigging and air piping. Coupler cut levers and air hoses were added. I painted it with Floquil Boxcar Red to represent the color of non-revenue cars of that time, and lettered with leftover white decals. Without these old kits being available now a modeler could start with a Westerfield B&O M-15J boxcar kit number 5053 and do a lot of kit bashing on it. Or just scratch build it!





Scott Trostel's memories of the tool car,

I don't recall the exact details of the tool car floor plan any more, although I know when the car was in Piqua, the office end was on south end of car and his desk was on the left and bunk was on the right. There was an overhead water tank and a sink. The coal bin was just on the tool side of the partition separating the tool area. He had a workbench in there and it was along the right side. I remember the coal stoves were flat stoves. He tried to give me one, but how was a fourteen year old going to drag a coal stove home on his bicycle? Inside the tool car were rods, links, balance beams, big and small, boxes of pins, all kinds of tools from bars, jacks and special tools. Seems there was a wooden framed parts storage area, but I don't recall whether it was under the bench or separate, any more. The

inside of the car was painted green. I keep thinking a kind of Medium green, not flashy. Some things were hung on the walls, seems like cable, ladders and other incidentals.

By 1963, when I was eleven years old, the scale inspector was NOT routinely riding in the tool car, although I seem to recall this man saying that sometimes he did stay in it overnight. He had a white passenger car he drove, probably his own personal car, as the B&O paid mileage for use of personal vehicles at that time. When they got rid of the tool car, he drove one of those heavy-duty dark blue pick-up trucks and complained long and loud about not having half the tools he needed to do a job right. It had a gold B&O Capitol Dome emblem on the door and a number.

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The Mother Hen and her two Chicks



The scale inspector is busy checking out this scale at Eddsville Yard on Ed Kirstatter's layout. I wonder who all of his "Helpers" are? When are they painters going to add the black trim?

LATE 19TH CENTURY M-2, M-3 AND M-5 BOXCARS IN HO

BY MICHAEL HOHN, MMR

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



Yard scene on my Lehigh Valley Railroad in upstate New York in 1888. The B & O is making its presence felt. The three cars in the foreground are described in this article.

Introduction

In 2007 B.T.S. did the modeler of early B & O rolling stock a big favor by released laser cut wood kits of the B&O M-2 boxcar, as well as a modified version of the kit sold as a “generic boxcar.” Now, I model the Lehigh Valley Railroad in the 1880’s and the bulk of my rolling stock must represent that railroad and lines that connect with it directly. Nevertheless, it is appropriate to run a handful of cars from the larger railroads a couple of states distant. Thus, when B.T.S released these kits, it was time to get away from my obsessive LV car-building program and bring a little diversity to my roster.

My task was made easier by the car diagrams available for the B & O, allowing me to model several boxcar styles fairly easily and accurately. In addition to building the M-2, I decided to kitbash the B.T.S. kits to model M-3 and M-5 boxcars, all present on the B & O roster in the 1880’s. This article describes how I used the B.T.S kits to build these boxcars. I will begin by describing modifications I made to the stock M-2 kit.

M-2

The M-2 was not a frequently-seen prototype; according to the 1888 Official Railroad equipment Register there were only 95 in the 14001-14099 number series. The kit manufacturer gives a build date of circa 1870. The radial roof was typical of cars of that period, although to the best of my knowledge the length of almost 34 feet was unusual.

The beauty of the B.T.S. kit is that it goes together easily if the builder follows the detailed and clear directions. The result is a model with square corners and plumb sides. Nevertheless, I did make some modifications, largely to make the car look closer to prototype photos of early B&O boxcars, and to provide a few more details.

I’ve not built very many laser-cut kits of rolling stock, but the ones I’ve done share the basic design of a core representing interior framing covered by thin sheathing, more-or-less prototypical in thickness. This allows one to have a realistically detailed interior visible through open doors.

The exposed end beams as provided in the kit appear a little too thick to me, so I made my own from 8” by 8” and 2” by 10” stripwood. Similarly, the fascia looked too wide. The instructions tell one to glue the fascia to the sides and ends before attaching the subroof and roof. This leaves the edges of the wood subroof showing between the fascia and the roof. I deviated from the instructions and glued the subroof first, sanded the edges flush with the sides, and then attached the roof, making sure it was centered side-to-side and end-to-end. Finally, I glued on the fascia such that it covered the edges of the subroof and snuggled up to the underside of the roof. I modified the door by leaving off the diagonal bracing; the car diagram does not have this bracing, and it would only get in the way of any lettering on

the doors. I used door stops from the Tichy Boxcar Door Hardware part 3070 and added nut-bolt-washer castings (Grandt Line 5045) to grabirons on the roof and sides, as I do with all my models. I feel these provide a subtle, but effective detail to models.

Trucks are from Bethlehem Car Works (part no. 134).

The resulting model represents a boxcar showing a transition from the 28ft. radial-roof M-1 boxcar of the 1870's to the 34ft peaked-roof M-3 and later cars typical of the 1880's-90's.



Completed M-2 car. Distinctive features are the exposed end beams, herringbone ends, and radial roof.

M-3

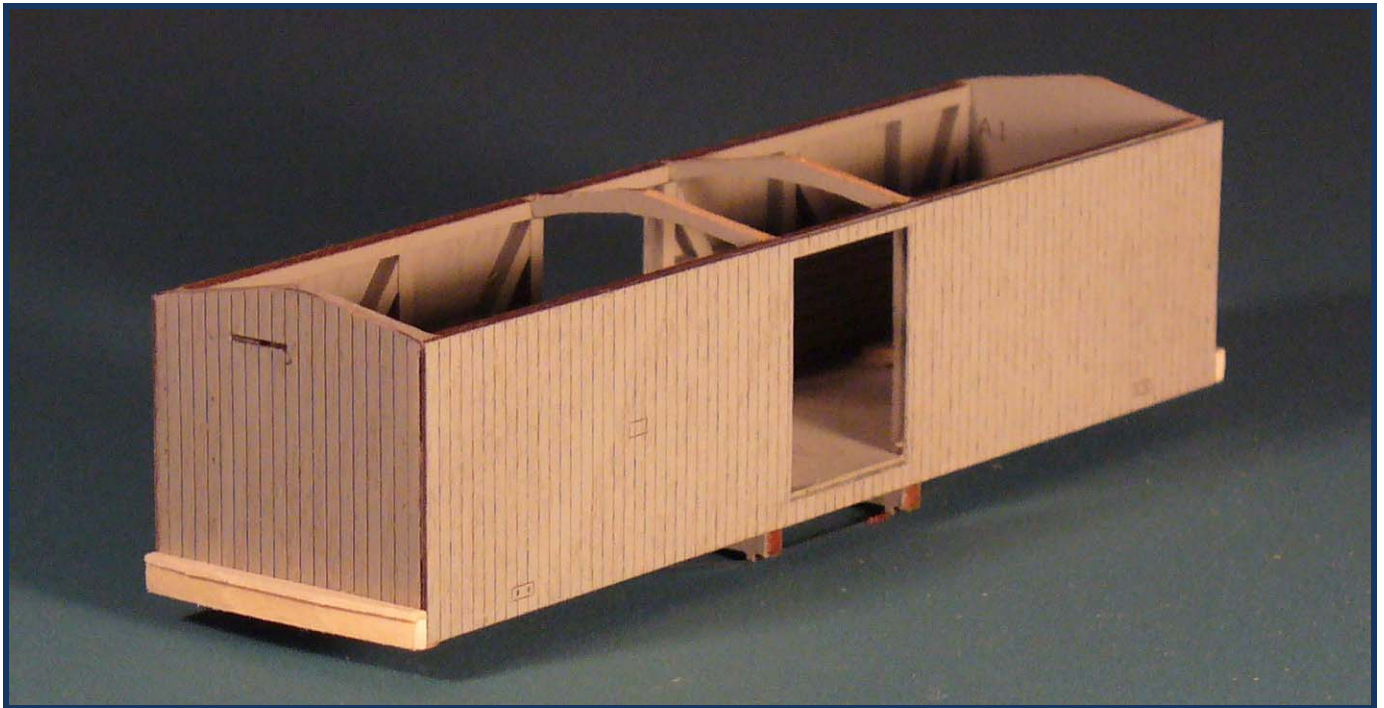
This car is also transitional. First built in 1883 when railroads were still running many 28 to 30ft boxcars, it is longer but about the same height as the earlier cars. Unlike B&O boxcars that preceded it and several types that followed, it apparently had vertical sheathing rather than the distinctive herringbone ends. The ORER for 1888 lists 868 cars in the 14100-14999 number series, and 179 in the 33000-33579 series.

I modified a B.T.S. 33' 9" 1870 Radial Roof boxcar kit so that I would have the vertical board ends. To obtain the peaked roof, I simply modified the core ends and end sheathing. I found this was easier to do

before the pieces were removed from the sheets of wood they come in. I also did the same for several of the carlines, those roof supports that run from side-to-side in the car.

I cut out scribed sheetwood for the roof, and used the roofwalk and its supports from the kit. Fascia was constructed from 1 by 4" stripwood for the sides, and 1 by 12" for the ends.

The generic boxcar kit comes with grabirons for the ends, but the M-3 car diagram shows a ladder, so I used the ladders from an M-2 kit I was planning to use to kitbash the M-5.

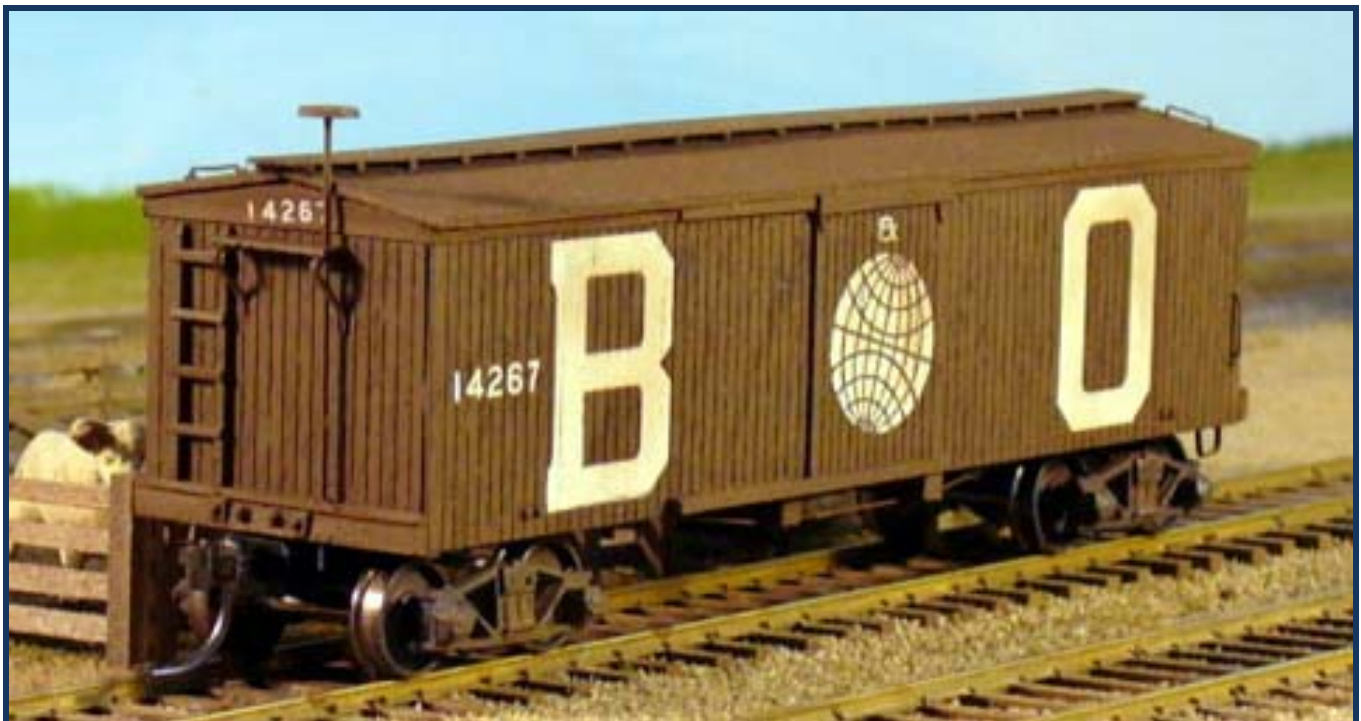


M-3 boxcar in progress. Notice the vertical siding on the ends, and the exposed end beam.

As with the M-2 described above, I fashioned my own end beams. Car diagrams do not show the number of trussrods for the M-3, but in general four were used on cars of this length, so four I built. The square nut-bolt-washer castings are GrandtLine part 5096. I left off the door bracing.

The modeler must decide where to add grabirons on the sides and ends because the car diagrams are no help and I did not have photos. I pretty much followed the same placement as the M-2.

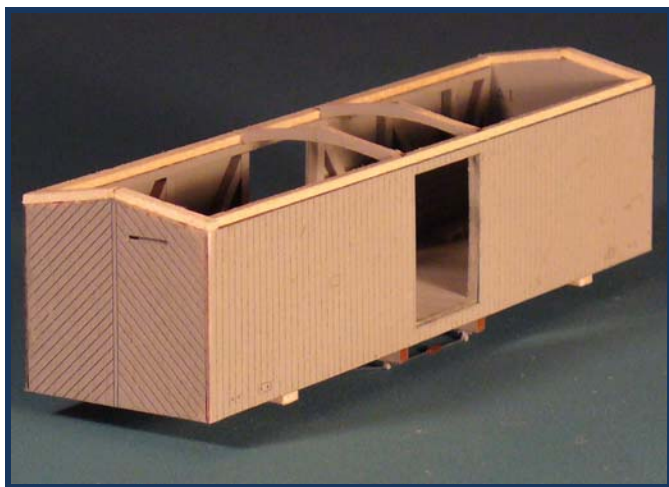
I found the old pair of Cape Line trucks in my parts box.



Completed M-3 boxcar.

M-5

This car reverts back to the herringbone end, so I started with the B.T.S. kit for the M-2. I was a little luckier with this car: I actually found a photograph in the Summer & Fall 2000 issue of the *Blue Mountain Express*, quarterly newsletter of the Western Maryland Historical Society. It shows the side and a good part of the end. From the photo I could see that the car diagram was fairly accurate.



This in progress photo shows the stripwood around the top of sides and ends to heighten them, as well as the ever-stylish herringbone ends they sport. No exposed end beams on the M-5.

The M-5 was built in 1886 and in greater number than any of its 34ft predecessors. According to the 1888 ORER, there were approximately 2,000 cars in number series 34002-34501 and series 35500-36999.

I built my model about the same way as the M-3, with one important difference. The M-5 was about 4 inches taller than the earlier car, so after building the core and adding the sheathing—trimmed for the peaked roof of course—I added lengths of 4 by 4" stripwood to the tops of the sides and ends before fitting the carlines and roof. The 1 by 4 fascia on the sides and 1 by 12" fascia cut to fit for the ends hide the vertical extensions.

Following the photo, I built new body bolsters from 4 by 12" stripwood, simply glued to the underframe with the ends exposed under the side sheathing. I moved the body bolsters closer to the center of the car to accommodate trucks of longer wheelbase, such as the Kadees. I typically glue a block of scale 6 by 12 by 18" wood to the body bolster where the trucks mount; the thickness depends on the trucks to be used.

The photo shows grabirons on the ends rather than ladders, so I simply used the ones that came with the generic boxcar kit. Once again I elected to mount four trussrods using the nylon line and turnbuckles supplied in the kit. I used 3" queenposts on this car (Grandt Line. 5052). Note that this car lacks the exposed end beams of previous cars. Grant Line 5093 form nut-bolt-washers for the two inner truss rods. I also added corner braces to the ends (Grandt Line 5159).

I used the kit brakewheel, but found some Grand Line castings in my parts box for the ratchet mechanism at the roof and the brakestaff support at the bottom of the end. Trucks are from Bethlehem Car Works.

Paint and Lettering

I painted all cars with Floquil Roof Brown following a suggestion I read in an e-mail. I don't know for certain that this color is correct for the period I model, but at least it makes for distinctive cars and looks appropriate. I've seen similar colors used on buildings of that era and it must have been cheap.

Lettering is from Clover House. I debated what to use on the earliest cars, but photographs from the period show yards full of boxcars with this globe design, with some variations. The photo of the M-5 on the Western Maryland shows this lettering scheme.



Completed M-5 boxcar.

Conclusion

Now I have a lot more variety on my layout with a total of four boxcars from that great railroad to the south. Did the LV interchange much with the B&O? I don't know, but turning the question around, I've seen LV boxcars in photos of the B & O. I've also

seen B & O boxcars on several lines in New England, so I assume they wandered around on the LV as well. Now I have to identify some logical commodities for my new cars to carry.

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